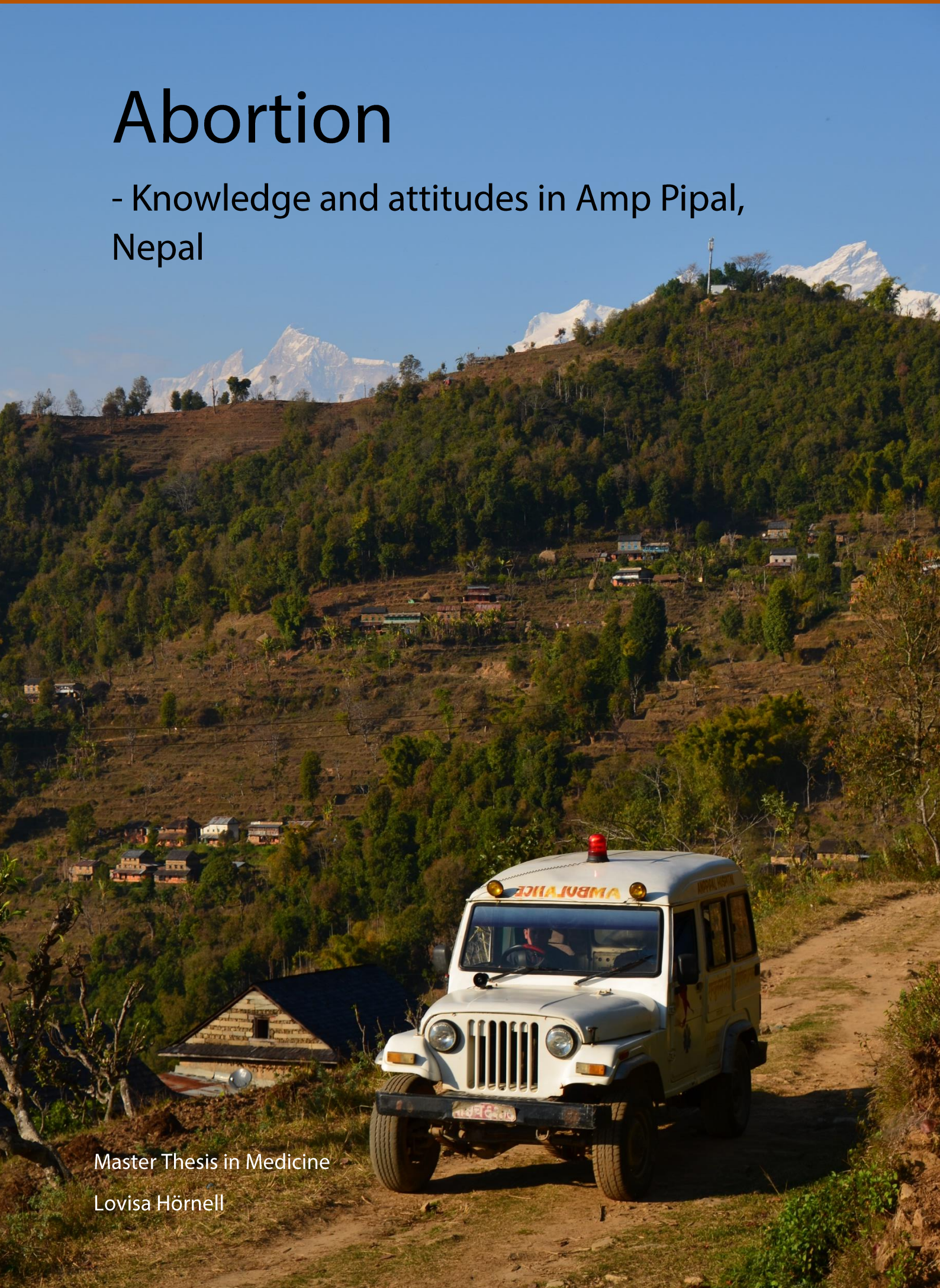
Abortion

- Knowledge and attitudes in Amp Pipal, Nepal



Master Thesis in Medicine

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Abortion – Knowledge and attitudes in Amp Pipal, Nepal

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Abstract

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Background: 50,000 young women worldwide die every year due to unsafe abortions, whereof 99% in low-income countries. Nepal used to have one of the highest maternal mortality ratios in the world, but the numbers are rapidly decreasing after abortion legalization in 2002. Still the majority of the population is not aware of the new law, and common attitudes hinder women from seeking safe abortions.

Aim: The aim of this study was to investigate knowledge about and attitudes towards induced abortion among adults at Amp Pipal Community Hospital in Nepal, and to analyse differences between age groups, individuals with different education levels, ethnicities, sex or between medical students and other people.

Methods: The study was based on structured interviews with questions in Nepali, using a translator.

Results: 118 patients and 7 medical students were included. Only 10% knew that abortion was legal until week 12 of pregnancy regardless the reason. A significant difference in knowledge was mostly seen between medical students and the other study participants. The attitudes differed significantly depending on the reasons for abortion, and became more positive with increased knowledge.

Conclusions: Knowledge about the abortion law was poor in this study. Most of the study participants thought abortion was justified after rape or because of medical conditions. Few thought abortion was justified due to poverty or sex-selection, or when only one parent wanted to abort.

Implications: Even where abortions are legal, far from everybody are aware of this. Safe abortions are considered a human right, and should be evaluated based on availability, accessibility, acceptability and quality to further reduce the maternal mortality.

Key words: abortion, legalization, knowledge, attitudes

Contents

1. Background

1.1 Maternal mortality and unsafe abortions

Maternal mortality is a considerable problem in the world today, and maternal health is the one of the eight Millennium Development Goals that is the furthest from being achieved by the end of 2015 (1). Every year 290,000 young women die during and following pregnancy and child birth, 99% of them in low income countries (2). Unsafe abortions account for a considerable proportion of these deaths. The World Health Organization (WHO) estimated in 1990 that 70,000 women dies every year due to unsafe abortions (3), a figure that Grimes has compared with a jumbo jet crashing almost every other day all year round, each time killing 400 young women on board. If this was the case, reactions worldwide would be truly dramatic, but when it comes to unsafe abortions news reports are scarce (4). In 2008 the World Health Organization estimated that the number of women dying annually due to unsafe abortions had declined to 50,000 (3).

Although death rates are alarming even more women suffer from lifelong complications (2). For example, it is estimated that 24 million women at present are affected by infertility due to unsafe abortions (5). Unsafe abortion is defined by WHO as "a procedure for terminating an unintended pregnancy either by individuals without the necessary skills or in an environment that does not conform to minimum medical standards, or both" (4). The most common complications to the procedure are excessive blood loss and infection resulting in septic shock (6, 7), as well as gas gangrene from *Clostridium perfringens* and tetanus (8). Treating complications from unsafe abortions takes up a large proportion of the limited healthcare resources in many low-income countries, since 20-50% of women having unsafe abortions are hospitalized for the complications (8). The disability adjusted life years (DALYs) lost as a consequence of unsafe abortions in the world is calculated to be 5 million per year (8, 9).

Further, 220,000 children lose their mother every year, which is associated with receiving less health care and social care and a higher risk of dying (8).

The first and most important action to reduce the mortality and morbidity due to unsafe abortions has been proven to be legalization (10, 11). It has been shown that legalization does not affect the number of abortions being performed, only how they are performed (4, 5). Unplanned pregnancies have been common in all times, and many women are willing to sacrifice health and risk their lives for having an abortion (12). Many studies show that education and access to contraceptives can reduce the number of unwanted pregnancies, but that these measures never replace the need of safe abortions. When comparing the contraceptive knowledge among Nepalese women who seek an abortion and a control group, no significant difference could be identified (13), and 50% of the women seeking an abortion used contraceptives during the month of the unintended pregnancy (14). It is estimated that about 6 million unintended pregnancies occur every year even though a contraceptive method has been used correctly and consistently. Some countries prohibit abortions attempting to increase the number of births in the country, but this has also proven to be ineffective, with numbers of births stable regardless of the legal status of abortion (4). The lowest abortion rate per 1000 women is seen in western Europe, where safe abortions are easily accessible on request (5).

1.2 The situation in Nepal

1.2.1 History

Nepal has until recently reported one of the highest maternal mortality rates in the world, and the average maternal mortality ratio (MMR) for the years 1990-1996 was 539 per 100,000 live births (15). This can be compared with Sweden, where the MMR is stable from year to year at about 4 per 100,000 live births (16). At least half of all pregnancy-related deaths in Nepal were due to unsafe abortions (17).

In Nepal, men are considered superior to women, abortion is often considered a sin (18, 19), and childbearing is traditionally seen as women´s obligation (20, 21). Based on ancient Hindu scriptures and traditions, the *Muluki Ain* was introduced in 1854 and revised in 1963. It stated that termination of a pregnancy was not allowed for any reason (15). The law on abortion was one of the strictest in the world, and many women were imprisoned and lost their right to any family property. They were convicted for infanticide or murder, regardless whether the pregnancy threatened the woman's life or was a result of rape. Many women, especially those who were poor and uneducated, were put in prison even for miscarriage (22, 23). The penalty could be as high as life imprisonment, and one study showed that 20% of the women in Nepalese prisons were there because of abortions (20), and more than one in four of them said they had nowhere to go after a potential release (22). Worth mentioning is that no male partners or abortion providers were held accountable, even if the husbands often were the ones who had decided on the abortion. Better-off women travelled across the border to India to seek abortions, and were therefore not put in prison (23).

At the same time hospitals were filled with young women with severe complications after trying to abort. One study showed that 54% of all patients in the gynaecology ward were admitted due to complications after unsafe abortions (12), and 50% of all maternal deaths in the hospitals in one study were due to abortion-related complications (15). These figures do not take into account all the women who died at home as they lived too far from the hospital or were afraid of seeking medical care due to the illegal status of abortion (23). Of all women who underwent unsafe abortions, 25% had serious complications. The more dangerous the method was, the more likely it was to terminate the pregnancy. Methods used can be divided into oral and injectable medicines, vaginal preparations, intrauterine foreign bodies and trauma to the abdomen. Substances used orally include laundry bleach and acid, and potassium permanganate tablets were placed in the vagina or cervix. Foreign bodies placed

into the uterus included wires, knitting needles, chicken bones and other pointy objects. Different types of trauma were performed, for example harsh abdominal massage and jumping from roofs (8, 19). Sharp pieces of glass or sticks covered in cow dung inserted into the cervix were also used (22, 24).

1.2.2 Legalization

After decades of reform efforts abortion was legalized in Nepal in 2002, with 147 of the 148 members in attendances voting in favour. The first government abortion services began in 2004. Many women were still in prison, prosecuted under the old law, until November 2004 when the then King of Nepal granted the first amnesty (15). The new abortion law now gives every woman the right to terminate a pregnancy of up to 12 weeks voluntarily, and up to 18 weeks if the pregnancy is due to rape or incest. It also gives the right to seek an abortion upon the advice of a medical practitioner at any time if the pregnancy poses a danger to the woman´s life or to her physical or mental health, as well as in cases of fetal abnormality or impairment. Abortion on the basis of sex-selection, however, is prohibited (15), as is sex determination of an unborn child (25). Women younger than 16 need the consent of a guardian, but this can be any adult friend or family member (23).

The new law has received some critique for not clarifying the indications for second trimester abortions (26), and also for not distinguishing between induced abortion, miscarriage and infanticide. If a woman aborts after the legal limit of 12 weeks, the punishment is five years imprisonment. If somebody else purposely induces the abortion against her will, however, the punishment for this person is only six months (22).

A common reason for wanting to terminate a pregnancy is inability to afford the next child (27), largely due to having too many children (15, 28). Contraceptives are freely offered by the government, but costs associated with travel to access them and a general lack of

information about this service make them inaccessible to many in practice (20). Also, no contraceptive can offer 100% protection against pregnancy, and hence abortion service is required to fully control the fertility rate. Among the female population in Nepal, 49% are in the reproductive age group 15 to 49 years (6), and out of all pregnancies in Nepal about 35% are unplanned (19).

1.2.3 Implementation

The more liberal law has saved many lives in Nepal. The maternal mortality ratio had gone down to 190 per 100,000 live births in 2013 (29) and Nepal has, as one of the last countries in the world, reached the global pattern of life expectancy where women live longer than men (17). The number of serious complications after an abortion has decreased significantly (10), but there is still much to do. The next important step to make sure that Nepalese abortion services are available and accessible to all who need them is the implementation of the new law. To ensure this to be successful, 35 detailed recommendations were made. These included, among other things, the need for changes in social attitudes towards abortion, work to abolish healthcare system barriers and recognizing the importance of meeting women´s needs. The main concerns for meeting women´s needs were said to be convenience and accessibility of services, caring and comfort, including service provider´s attitudes. It was also considered important ensuring that no woman is denied abortion because of inability to pay (23).

Legality is not equal to safety. Some illegal abortions are safe, and even where abortions are legal, safe abortions are inaccessible to many women (30). Making sure that people are aware of their legal rights is an important step to change the situation. Only 5% of participants in one study knew the meaning of abortion, but the number increased to 93% after an educational intervention showing that small acts can have significant effects (6). Studies also show that only 38 (6) to 67% of the people in Nepal know that abortion is legal, and the

awareness of more specific implementations of the law is much lower (31, 32). In one study only 7% knew that abortion was legal until week 18 if the pregnancy was due to rape, and only 20% knew that abortion is always permitted if the pregnancy affects the health of the mother or the foetus (11). The awareness is lower in rural areas, where 82% of the population lives (6, 29). It is also lower among poorer and less educated people, who constitute the majority of the Nepalese population. Many also erroneously think that a woman needs to be married and have her husband´s consent to legally abort (30, 33). One recent study showed that 67% thought that one had to be married, and 63% thought that it was illegal to abort if the pregnancy was due to contraceptive failure. Lack of awareness of the abortion law made women continue to seek unsafe abortions (6, 33, 34).

To make abortion services available is of great importance to implement the law. All practitioners performing induced abortions in Nepal have to be authorized, to guarantee high quality. A big programme for training staff has been carried out and in the cities the availability is sufficient (35). In the rural areas the inhabitants are much more dependent on the local hospital staff´s attitudes towards abortion, and if they have applied to be authorized. Numerous people still do not have access to safe abortion clinics. In some places the hospital refers to another place where the abortion can be done, but this means a considerable additional cost for these people. If they can afford transportation to get to the clinic, they will lose money for missed work and often for food and accommodation. Many of the poor people in rural Nepal cannot afford this and can only choose between an unsafe abortion and continuing the unwanted pregnancy (21, 24, 36).

One way of decreasing the problem with availability and accessibility is to educate midlevel health-care providers in medical abortion services, which has been shown to be as safe and effective as services provided by doctors (37-40). It has also been shown that 70% of pharmacy workers dispense tablets for medical abortion over the counter, so this is another

target group for education in order to provide safe services to more people (41). Many women prefer to go to a pharmacy rather than to a special abortion centre, since they feel more private. Today a prescription from a medical doctor is needed to legally buy abortion medications (24). One study has shown that home administration in medical abortion is as successful as administration at the hospital, and is widely preferred by the women due to the privacy and reduced costs (42). Educating both midlevel healthcare-workers and pharmacy workers can make women seek abortion earlier, which is important since complications are more common after abortions later in pregnancy (43).

Equally important as the steps described above is that abortion services take responsibility for working towards continued reduction of mortality and morbidity caused by unsafe abortions. Barriers to seeking safe abortion services include concerns over privacy and confidentiality and negative provider attitudes among others (34). Poor attitudes in health care workers prevent especially socially marginalized and low-income populations from seeking abortions (20). This reflects the impact of attitudes towards abortion in the society in general, and within the healthcare system in particular. Many women risk being ostracized if anyone gets to know about them seeking an abortion (44, 45). Several report being met with suspicion and hostility when asking for the service at authorized governmental hospitals, and the attitudes towards unmarried women are so harsh that many choose to go for unsafe abortions or even commit suicide instead (8, 34, 46). Only one third of the participants in a recent study knew that being unmarried did not make abortion illegal, and almost 70% thought abortion is more expensive if the woman is unmarried (34). The same misperceptions are found among healthcare workers (46). A recent study showed that 26% of women seeking abortion did not receive the service, and some were turned away for reasons that were not legally required, nor medically necessary, like not having the husband´s consent or being unmarried (30). Denial to provide certain components of reproductive healthcare for moral or religious reasons is

extensive and seems to be increasing globally, which many experts see as a serious global health and rights concern (47), particularly affecting women (30).

Husbands are mostly the ones who make the final decision whether to have an abortion or not in Nepal, and for 80-86% of the women who are seeking an abortion the husband pays for the service (27). The second most important persons for taking the final decision to end a pregnancy seems to be healthcare providers, and almost all young couples adhered to their advice to carry on the pregnancy, at least temporarily (19). This again shows the importance of the attitudes among healthcare personnel.

Misunderstandings about abortions are common among healthcare workers and others, which also affects the acceptability of the service. Many strongly believes it is very dangerous, and that it can cause infertility and other severe complications, even if it is performed in the right way (18, 19). The truth is the opposite, abortion is a very safe procedure with few or no severe complications if performed correctly. Compared to the physical risks of undergoing an unwanted pregnancy the risks associated with modern abortion procedures are negligible. New methods such as pharmacological abortions using Mifepristone-misoprostol and manual vacuum aspiration are effective, safe and cheap and therefore suitable for the resource-constrained healthcare system in Nepal (8, 35, 48). The cost of treating complications from unsafe abortions is estimated to be ten times higher than providing safe abortion services (8). The first step to increase the use of these modern and safe abortion methods is to make sure the health care workers know of them. A study from 2005 showed that only 75% of the gynaecologists and 40% of the general practitioners had heard about misoprostol (49).

1.3 Sex-selective abortions

The legalization of abortions in Nepal has not only been positive, as an increased incidence of sex-selective abortion is now seen in Nepal. This has been a reality in many countries in Asia

for a long time, and of the 100 million girls that are now missing in the world more than 80 million are missing from China and India (50) - Nepal´s neighbour countries. In the 1990´s Indian billboards stated "Invest Rs. 500 now, save Rs. 50,000 later" to encourage potential parents to abort female foetuses to save on a future dowry (51). In Nepal, 200,000 girls and women were estimated to be missing in 2010 (52). A combination of today´s low fertility rate, the resulting increased need to have a son sooner, access to advanced technology for determination of the sex of an unborn child and easier access to safe abortions are increasing the numbers of sex-selective abortions (25). A recent study from Kathmandu, the capital of Nepal, showed that 113 boys were born per 100 girls in total, and the sex ratio varied significantly in correlation with the number of previous pregnancies. The sex ratios at birth, from the first to sixth delivery, were 61, 79, 101, 210, 286 and 1100 boys per 100 girls respectively. The reasons for wanting a boy rather than a girl were to continue family lineage, to bring honour to the family, old-age security and performing funeral rites. To have a daughter means a sizable cost for the family in terms of dowry, which still is performed in most parts of Nepal, and after the wedding the woman moves to her husband´s family and is obligated to take care of them instead of her own family (25, 53). Sex-selective abortions are most common among wealthier, more educated women in urban areas with as few as 325 girls born per 1000 boys (25). 98% of the pregnant women in another study knew of at least one way to determine the sex of the foetus, and 21% would use a pill to make the child have the preferred sex if it existed (53). Even though the majority of the population in Nepal think the abortion law is still very restrictive, only 10% knew that abortion due to sex selection was illegal (6).

Health-care workers tend to think that sex-selective abortions are unethical, but they often still sympathize with the women seeking the service since they know the pressure they have from their families to have sons. Many find this dilemma hard to deal with, and some suggest that

sex-selective abortions should be legalized for certain particularly vulnerable and poor groups of people (24). They also find it hard to identify which abortion cases are based on sex-selection (54).

1.4 Amp Pipal Community Hospital

Amp Pipal Hospital is a former mission hospital in a mountainous, rural area in the Gorkha district. It was built by Christian missionaries in 1969 as the first hospital in the district. In 1990 it stopped being a mission hospital, and from 2003 Nepalmed, a small German non-governmental organization (NGO), is the main provider of money, technical support, medical expertise and training of the local staff. The government of Nepal does not contribute. The hospital´s catchment area consists of 200,000 inhabitants, and about 20,000 patients come to the hospital every year. Most patients walk 0.5 to 12 hours to get there, others are carried there by relatives and some come with the ambulance jeep. During monsoon, the road to the hospital is often impassable, so the hospital staff must make sure to have all medications and equipment they need before it starts. It is also much harder for the patients to get to the hospital during these months.

Amp Pipal hospital is well equipped for being such a rural hospital in Nepal, and with a new operation theatre they are capable of performing many different kinds of surgery. All family planning is free, including sterilization surgery for both men and women. Temporary injectable contraceptives are most widely used. When it comes to abortion, the hospital is not authorized. The staff does not want to perform induced abortions since they prefer contraceptives. When a woman comes and asks for an abortion, she is referred to the closest abortion provider, which is located in Dumbre 24 kilometers away. A bus leaves for Dumre every morning, and takes about three hours and costs 150 NPR (1.5 USD). During monsoon it is very uncertain when the bus leaves, since the muddy roads are often too slippery or

destroyed by the heavy rain. To walk there takes approximately six hours, and the way back takes even longer since it is uphill (55).

1.5 Future challenges

Safe abortions are considered a human right (56), and to further reduce maternal mortality due to unsafe abortions, it is important to address availability, accessibility, acceptability and quality of the services (57). This includes to increase number of service providers, increase knowledge about the abortion law and improve attitudes towards induced abortions among both men and women (6, 11, 24, 32, 43, 58). Women are the ones who are pregnant, but men often prove to be the decision maker when it comes to terminate the pregnancy. Health-service providers are in key positions to help women overcome barriers to abortion (20). Few or no studies in Nepal have included men when asking about abortions, and most are performed in urban settings where only 18% of the population lives. This study included both men and women, and was performed at a rural hospital that was the only reachable care-facility for many inhabitants.

2. Aim

The aim of this study was to investigate knowledge about and attitudes towards induced abortion among adults in the rural areas of Nepal.

2.1 Specific objectives

- Are there any differences in knowledge or attitudes between individuals of different age groups, between different education levels or ethnicity, between the sexes, or between medical students and other peoples?
- How does knowledge affect attitudes?
- Are there any differences in attitudes towards different reasons for wanting an abortion?

3. Material and Methods

3.1 Study design and approach

This is a cross-sectional study based on structured interviews that took place at Amp Pipal Community Hospital, a former mission Hospital in rural Nepal. The study had a quantitative approach and collected data were only used for statistical analyses. However a qualitative approach was also used as the interviews allowed participants to give more comments on the questions than if a questionnaire would have been used. This study dealt only with primary data, and is to be seen as an exploratory pilot study since the questions were created for this study. Amp Pipal Hospital was chosen because it is a rural Hospital with experience of working with foreigners, and because more than 80% of Nepal´s inhabitants live in rural areas. As a result this study is more representative of the Nepalese population than if it was carried out in an urban setting.

3.2 Population and data collection

Random selection of participants was used, where participants were recruited from the queue in the out-patient department (OPD), where they sought medical care for a big variety of reasons. All patient files were placed in a queue on a table in the OPD. The first patient in this queue who met the inclusion criteria was called into the private interview room where the translator Apsara Devkota read the informed consent in Nepali. The patient was then asked to participate. All loss was documented. The inclusion criteria were age over 15 years old and ability to give informed consent. The exclusion criteria were participation in the study before and diagnosed chronic obstructive pulmonary disease (COPD), the latter because these patients were included in another study that took place at the same time.

The informed consent was written by the author, approved by Professor Göran Kurlberg and translated to Nepali by Babu Ram Giri at Amp Pipal hospital. It included information about

the randomized selection of participants, the absolute anonymity, that it was not possible to connect the answers with any individual participant and the possibility to stop the interview at any time (see appendix 1).

A questionnaire for the structured interviews was created by the author, regarding the abortion law in Nepal and previous studies on common reasons for wanting an abortion in Nepal. It was approved by Professor Göran Kurlberg and gynaecologist Helena Hognert in Sweden, and modified with help from Dr.Yagya Pokharel at Patan Academy of Health Scinces (PAHS) and doctoral candidate Binjwala Shrestha in Nepal. After this the questionnaire was translated to Nepali by Macha Bhai Shakya at PAHS. It was also back-translated to English at Amp Pipal hospital to ensure correct translation.

A pilot study was conducted between February 23 and March 9. In total 24 patients were included in the pilot study. During this time the translator was informed about the study and what was expected of her, and the questionnaire was culturally refined. The inclusion age was also culturally modified and changed from 18 years old to 15 since this is the age at which one is considered to be a grown up in Nepal, and many are already married and have children at the age of 15.

Data was collected between March 10 and April 5 by the author and the translator Apsara Devkota who read the questions out loud in Nepali. Patients were randomly selected from the queue in the out-patient department (OPD), where the first patient in the queue who met the inclusion criteria was asked to come into the private interview room, where the translator red the informed consent in Nepali and asked the participant if he or she wanted to participate. If they approved, the questions were asked in Nepali. The answers were collected on an answering sheet by the author with no other information on the patient than the answers of the questions, and the answering sheets were handled confidentially with no possibility to be connected to any individual. The original plan was to include all doctors and nurses at the

hospital in the study as well, but this was not possible because they were so few and their anonymity could not be guaranteed. Seven medical students who had their rural placement at the hospital at the time of the study were included. They filled in the questionnaire themselves and put it in an envelope that was closed and handled confidentially afterwards. This was to ensure honest answers since the author got to know the students during the time of the study.

3.3 Variables

The questions dealt with demographic characteristics as well as knowledge about and attitudes towards induced abortion. The demographic characteristics asked about were sex and age. The participant was also asked about highest level of education completed, with the alternatives *"never been to school/illiterate", "informal education (literate)", "primary level (1-5)", "lower secondary level (6-7)", "secondary level (8-10)", "higher secondary level (+2)"* and *"higher education (bachelor, masters or PhD-levels – University)".* These groups proved to be too specific, so four new groups were created afterwards. These groups were *"illiterate", "primary level (1-5)", "lower secondary to secondary (6-10)"* and *"higher education (+2 to University)".* The next question was on occupation, were a distinction was made between medical students and other people. The last demographic question was on ethnicity, where the participant answered and the translator converted it into one of the six big groups with agreement from the participant. The different groups were *Brahmin, Chhetri, Janagati, Madhesi, Muslim* and *Dalit,* which are the generally accepted groups of ethnicities or casts, as they are more often referred to in Nepal.

The second part of the questionnaire included six short cases describing different situations where a pregnant woman, or in one case only her husband, wanted an induced abortion, followed by three short questions which were the same in all cases. The cases dealt with abortion due to poverty and inability to afford another child, abortion when only the wife or only the husband wants to seek an abortion, abortion after rape, abortion when the pregnancy

threatens the woman´s life and sex-selective abortion. The questions for every case were if it was legal or not to seek an abortion in Nepal in this situation, what the participant thought was morally right to do and what the participant personally would have done in the same situation. Questions were also asked on how many weeks it is legal to seek an induced abortion in Nepal for any reason, and if the participant thought the service should cost anything or not. The final questionnaire consisted of 25 questions (see appendix 2), and each interview took, on average, 15 minutes.

3.4 Statistical methods

IBM® SPSS® Statistics 22 (IBM Corporation, Armonk, NY, USA) was used for analysis. The data was entered in the same way as on the answering sheet, and three age groups were created afterwards. Pearson chi-square test was used to compare categorized data, Fisher´s exact test was used when sample size was less than five in one or more of the groups compared. A 95% confidence interval, and $P \leq 0.05$ was used to define statistically significant differences. The analysis compared results between the different demographic groups, and also between the different questions. It also analysed how knowledge about the abortion law corresponded to positive attitudes towards abortion.

The total score of the participants was calculated by counting the correct answers on the seven questions that addressed knowledge, using transform/compute in SPSS. The mean score was compared between different demographic groups using independent samples T-test.

A missing value analysis was done to investigate if the answers on all questions were representative for the whole participant group. A power analysis was not done since it was impossible to estimate the result as no previous study has investigated knowledge and attitudes towards abortion in both women and men.

3.5 Ethics

This study is sensitive since induced abortion is a controversial matter in Nepal. All participants were interviewed in a private room where no other persons than the participant, the author and the translator were allowed. The informed consent was read out loud in Nepali and they were then asked if they wanted to participate. All participants were asked the same questions, in their own language Nepali to avoid misunderstandings. The translator was a young woman who made an effort to make all the participants feel as comfortable as possible with answering. Hard copies of the answering sheets are safely stored in the author's apartment. Ethical approval was given from the Institutional Review Committee of Patan Academy of Health Sciences. The study was also approved by Dr.Yagya Pokharel at PAHS and Babu Ram Giri at Amp Pipal hospital.

4. Results

4.1 Study population

130 participants were chosen in order from the queue of patient files. Four of them were not asked to participate because of close relationships to the translator. Two of them were the translator's teachers and two were the translator's grandmothers. One more participant never started the interview due to hearing problems. 125 patients were asked to participate after hearing the informed consent, and all of them agreed. Seven of them interrupted the interview after a few questions. In all, 118 participants completed the interview. In addition seven medical students filled in the questionnaire themselves, giving a total of 125 participants in the study. 86 were women and 39 were men. The socio-demographics are summarized in Table 1.

There was no significant difference between men and women regarding age or ethnicity. Almost half of the women (48%) were illiterate, compared to one fifth of the men (21%) (p=0.007). All medical students at Amp Pipal hospital at the time of the study were women, and their mean age was 23.6 years.

Tabel 1 - The socio-demographic factors of the study population

	Women (n=86)		**Men** (n=39)		**Total** (n=125)	
Participants characteristics	n	%	n	%	n	%
Age groups						
15-35	42	49	15	39	57	46
36-55	28	33	15	39	43	34
56-80	16	19	9	23	25	20
Level of education						
Illiterate	41	48	8	21	49	39
Primary level (1-5)	14	16	8	21	22	18
Lower secondary to secondary level (6-10)	15	17	15	39	30	24
Higher level (+2 to University)	16	19	8	21	24	19
Occupation						
Medical student	7	8	0	0	7	6
Other	79	92	39	100	118	94
Ethnicity						
Brahman	31	36	16	41	47	38
Chhetri	16	19	6	15	22	18
Janagai	14	16	6	15	20	16
Madhesi	0	0	0	0	0	0
Muslim	2	2	1	3	3	2
Dalit	23	27	10	26	33	26

4.2 Knowledge

Only 10% of the study participants knew until which week it is legal to seek an induced abortion on demand, and 19% could not answer the same question. 49% out of these 10% were answers from the medical students. 8% knew it is legal for a woman to seek induced abortion without consulting her husband. In the two cases where abortion is illegal the answers were more correct. 94% correctly thought it was illegal to seek an abortion when only the husband wants to do so, and 86% thought it was illegal to have sex-selective abortions (Figure 1). In total, the average number of correct answers was 3.72 out of 7

questions (53%).

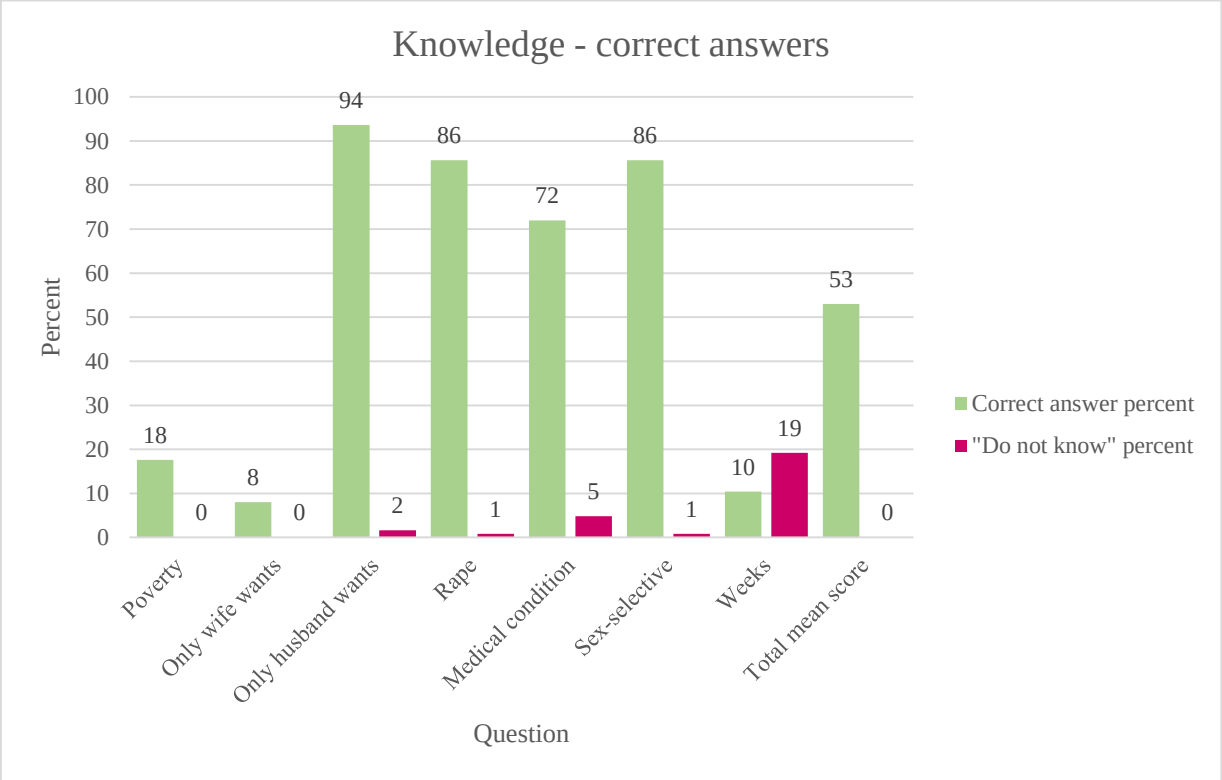

Figure 1 - Percent correct and "do not know" answers out of all 125 answers in the questions about the abortion law, and the total mean score, calculated with "descriptive statistics" in SPSS. P-value was calculated with Pearson chi-square test, comparing the number of correct answers between the different questions. P≤0.05.
Questions:

- Poverty: A married woman becomes pregnant. The family is very poor, so they can´t afford to have another child right now. They want to have an abortion in week 6 of pregnancy.
  - In this case, is it legal for them to have an abortion in Nepal? *Yes is correct.*
- Only wife wants: A married woman gets to know that she is pregnant in the sixth week, her husband is the father. She doesn´t want to have a child right now, but she knows that her husband wants to. She wants to have an abortion without telling her husband.
  - In this case, is it legal for her to have an abortion in Nepal? *Yes is correct.*
- Only husband wants: A married couple gets to know that they are pregnant in the sixth week. The father wants to have an abortion, but the mother wants to keep the child. She tells the healthcare workers that she doesn´t want an abortion when they are at the hospital.
  - In this case, is it legal for them to have an abortion in Nepal? *No is correct.*
- Rape: A married woman becomes pregnant after being raped by an unknown man. She wants to have an abortion in week 6 of pregnancy.
  - In this case, is it legal for her to have an abortion in Nepal? *Yes is correct.*
- Medical condition: A married woman becomes pregnant. She has a medical condition that means that there is great risk that she dies during childbirth. There is no risk for the child. She wants to have an abortion in week 6 of pregnancy.
  - In this case, is it legal for her to have an abortion in Nepal? *Yes is correct.*
- Sex-selective: A married couple are pregnant in week 6. Now they get to know the sex of their child, and they want to have an abortion because they don't want a child of that sex.
  - In this case, is it legal for them to have an abortion in Nepal? *No is correct.*
- Weeks: Is it legal to seek an induced abortion for any reasons in some of the following weeks of pregnancy? Mark with X when legal:
  - Week 4, 8, 12, 16 and 20 of pregnancy. *4+8+12 is correct.*

There was no significant difference in knowledge between men and women or different age groups. The case in which only the wife wanted to seek an abortion showed significant differences between the ethnicity groups (Appendix 3). Apart from this, differences in knowledge was only significant between different levels of education (Figure 2) and between medical students and other people (Figure 3). In the case where only the wife wanted to seek an abortion, 6% of the illiterates thought it was legal to do so compared to zero in the two following education groups and finally 29% of the participants with higher education ($p \leq 0.001$). All of these where medical students, so taking them away from the higher education group would give highest knowledge in the illiterate group in this question. In the case where a woman wanted to seek an abortion after being raped, 96% of the illiterate correctly thought it was legal to do so compared to 76% in the primary and secondary level groups and 86% in the group with higher education ($p=0.040$). One third of the patients with a correct answer in the group of higher education were the medical students, so taking them away would again give the highest score to the illiterates. In the question of until which week it is legal to seek an abortion on demand, 8% of the illiterates were correct, compared to zero in the primary level group, 17% in the secondary level group and 32% in the higher education group ($p=0.013$). 83% in the last group was the medical students. The illiterates had a total of 3.8 points (54%) on average, compared to 3.5 (50%) in both the primary level and the secondary level group and 4.2 (60%) in the higher education group ($p=0.007$). For more details, see Appendix 3.

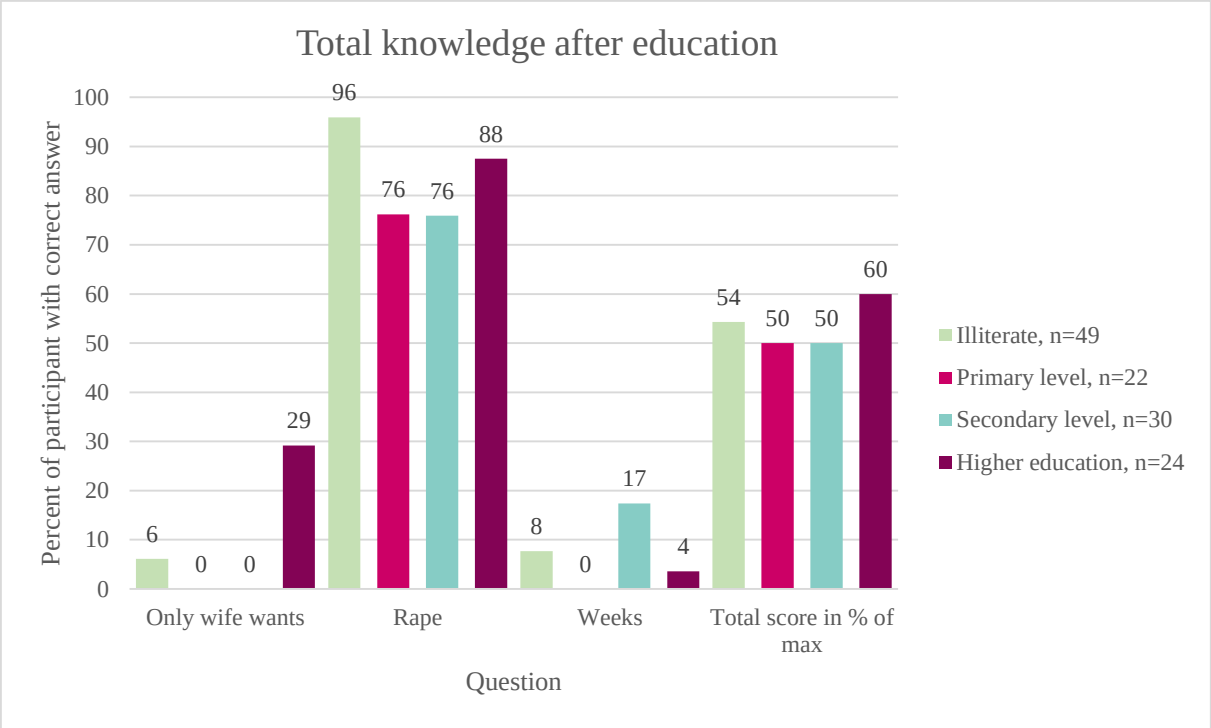

Figure 2 - Knowledge in different education groups. Showing only the questions with significant differences. For questions, see Figure 1. CI 95%, P≤0.05. P-value was calculated with Pearson chi-square test, comparing the number of correct answers between the different education groups. Fisher´s exact test was used when less than five participants in at least one group.

The biggest differences in knowledge was seen between the medical students and the other participants. In the case where only the wife wanted to seek an abortion, 100% of the medical students correctly answered that it was legal to do so, compared with 3% of the other participants (p≤0.001). In the case where only the husband wanted the abortion, 71% of the medical students correctly answered that it was illegal to do so, compared with 97% of the other participants (p=0.003). 71% of the medical students answered the question that concerned to which week it is legal to seek an abortion for any reason correctly, compared with 9% of the other participants (p≤0.001). In the total score the medical students had on average 5.4 (77%) points compared to 3.6 (51%) among the other participants (p≤0.001). For all questions see Appendix 3.

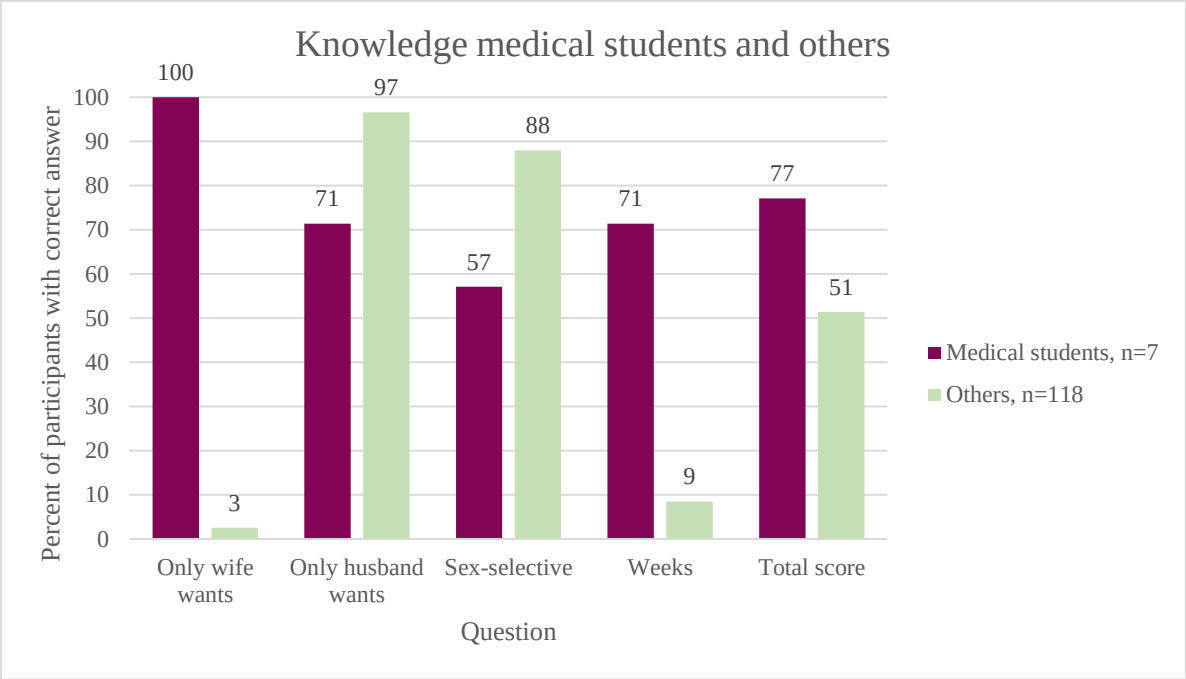

Figure 3 - Knowledge medical students and other participants. Showing only the questions with significant differences. For questions, see Figure 1. CI 95%, P≤0.05. P-value was calculated with Pearson chi-square test, comparing the number of correct answers between the different occupation groups. Fisher´s exact test was used when less than five participants in at least one group.

4.3 Attitudes

The attitudes towards induced abortion differed significantly between the different causes for abortion (Figure 4). 22% thought it was morally right to seek an abortion due to poverty, and 21% would do it themselves. When a woman wanted to seek an abortion without consulting her husband only 2% though it was morally right, but 4% would do it themselves. When the husband wanted his wife to seek an abortion against her own will, 6% thought it was morally right to do so and 9% would have done it themselves. The significance level comparing these two last questions is p=0.007 and p=0.196 respectively, meaning that there was a significant difference in what the participant thought was the right thing to do in the cases, but not in what they would have done themselves.

If the pregnancy was due to rape, 98% thought it was morally right to seek an abortion, and 86% would have done it themselves. When a woman wanted to seek an abortion because of her medical condition 82% thought this was morally right, and 74% would have done it themselves. Comparing the attitudes in those two cases gives p-values of 0.008 for morally right, and 0.767 for what the participants would have done themselves.

9% thought it was morally right with sex-selective abortion, and 6% would seek an abortion if they knew that the baby was of a sex they did not prefer. It was not asked in this study which sex the participant would prefer, but many patients commented on this issue themselves, and all of them said they would prefer a boy.

In all cases the participants were more likely to think it was morally right to seek an abortion than to seek one themselves in the same situation, with the exceptions of the two cases where the wife and the husband did not agree. In these two cases the number of participants who answered “seek an abortion” was higher for what they would have done in this situation than for what they thought was the morally right thing to do (Figure 4).

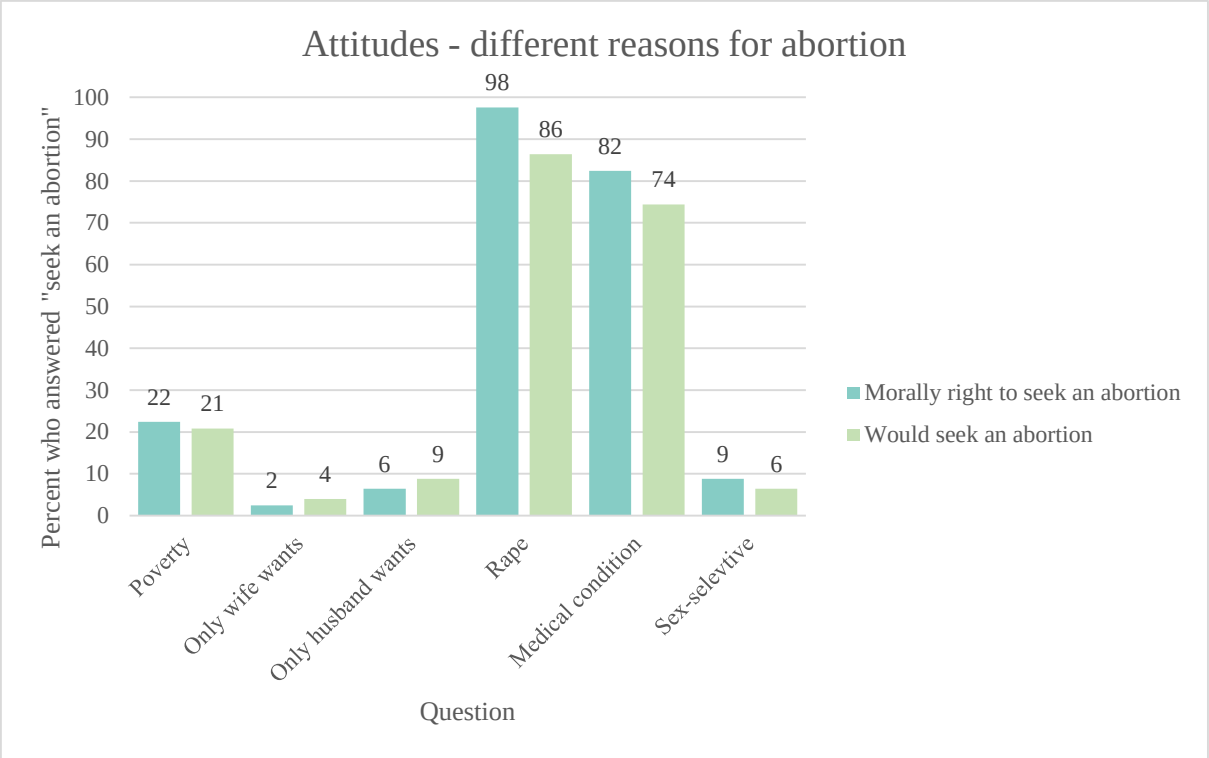

Figure 4 - Percent who answered seek an abortion on what is morally right to do and what they personally would have done in the six case questions. For questions, see Figure 1. CI 95%, P≤0.05. P-value was calculated with Pearson chi-square test, comparing the number of positive attitudes towards abortion in those two aspects between the different case questions.

In the case where the abortion was due to poverty, comparison of attitudes between the demographic groups showed significant difference between medical students and others, where 71% of the medical students thought it was right to seek an abortion in this situation compared to 20% of the others (p≤0.001). In the case where only the wife wanted to seek an abortion 29% of the medical students thought it was right to do so, compared to 1% of the others (p=0.008) (Figure 5). In the same case significant difference was seen between different groups of ethnicity, but there was only one person in each ethnicity group that answered that they thought it was right to seek an abortion. For more details, see Appendix 4.

In the questions of what the participant personally would have done in the different situations, significant difference was only seen in the rape case between medical students and others.

71% of the medical students would have sought an abortion in this situation, compared with 93% of the others (p=0.049) (Appendix 5).

In the question on cost, significant difference was again only seen between the medical students and others. 60% of the medical students thought abortion service should be free of charge, compared with 11% of others (p=0.019). For more details, see Appendix 6.

Attitudes were more positive towards abortion with more knowledge about the abortion law (p≤0.001), see figure 5.

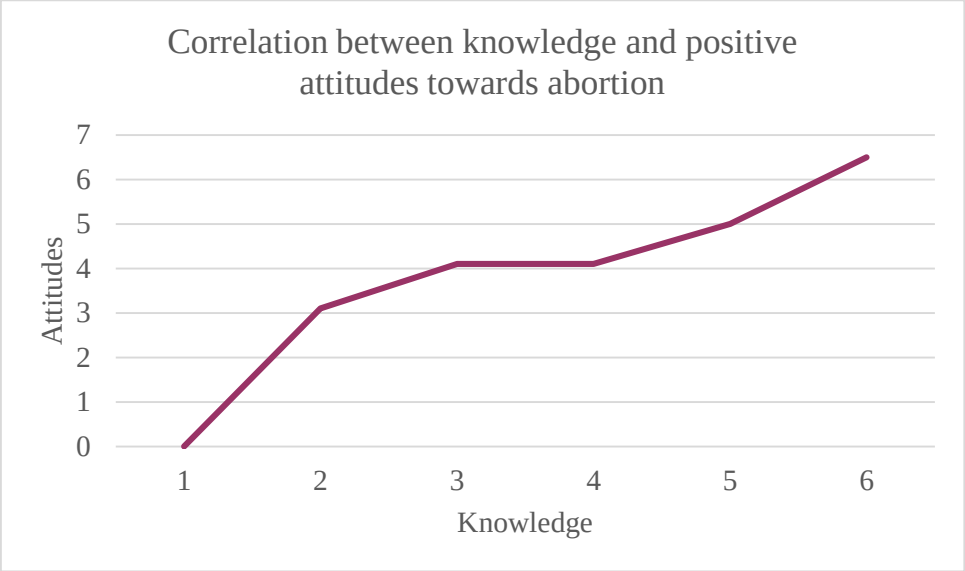

Figure 5 - Correlation between total knowledge and mean attitudes in the different reasons for abortion. Knowledge was calculated by counting all correct answers for each participant in SPSS, attitudes was calculated by counting all positive attitudes towards abortion for each participant in the six case questions. Correlation was calculated with crosstabs, P-value was calculated with Pearson chi-square test. P≤0.001.

4.4 Missing value analysis

All questions were analysed regarding missing values. The question on cost was the question with the most missing values, 38% of the participants could not answer this question. Second highest was the question on weeks with 19% missing values. Case 5:3, meaning what the participant would have done personally in the case with abortion due to medical condition had the third highest missing value percent, with 11% missing values. The rest of the questions had low levels of or no missing values. There was no significant differences between the participants which answered the questions and the ones who didn´t, meaning that the answers are representative for the whole study population.

5. Discussion

The general knowledge on the abortion law in Nepal was poor in this study. Significant differences in knowledge was almost exclusively seen between medical students and other participants, where the medical students knew more in the most questions. If the medical students were taken away from the higher education group the illiterates were most correct in almost all questions. This result was unexpected, and could be explained by that the translator helped the illiterates more than others to answer the questions. Another thinkable reason is that the illiterates in this study could have done more abortions themselves, and therefor knew more about the abortion law.

The attitudes differed significantly between different reasons for abortion, but significant differences between the demographic groups was again almost only seen between medical students and other participants. The attitudes towards abortions got generally more positive with more knowledge. In all, about 10% of the participants thought abortion was justified due to sex-selection, 20% if the abortion was due to poverty and the absolute majority if the pregnancy was due to rape or posed a danger to the woman´s life.

There was a significant difference between what the participants thought was morally right to do when only one of the parents wanted to seek an abortion. 2% thought it was morally right for a woman to seek an abortion without consulting the husband, and 6% thought it was morally right to force a woman to seek an abortion against her will if the husband wanted her to abort ($p=0.007$). This can be explained by the difference in status between the sexes in Nepal, and the fact that the husbands mostly make the final decision when it comes to abortion (27). This would be interesting to investigate more.

To seek an abortion when the pregnancy was due to rape or threatened the woman´s life was seen as the most justified reasons in this study. It is interesting to compare these two

questions. 98% thought it was morally right to seek an abortion in the rape case, compared to 82% if the pregnancy threatened the life of the women (p=0.008). Many participants commented this, and said that rape is illegal and therefore it is good to seek an abortion. When the pregnancy was a danger to the woman though, the comments were more focused on the woman´s obligation to sacrifice her life for the child, and that she should have known this before she got pregnant. The attitudes in these abortion cases could be interesting to further investigate.

5.1 Comparison to recent studies

10% of the participants in this study knew until which week it is legal to seek an abortion on demand, and almost half of them were the medical students leaving only a bit more than 5% of the other participants knowing this. In other studies this number has been higher, like in Thapa´s study from 2014 where 36% knew that abortion was legal up to 12 weeks of pregnancy (32). This might be because of the rural setting of this study, and also due to the poor literacy rate. In the study mentioned above only 20% of the women were illiterate and 69% had higher level education, compared to 48% and 19% respectively in this study. In whole Nepal it is estimated that 43% are illiterate (29). At the same time, another study showed that only 7% knew abortion was legal up to week 18 if the pregnancy was due to rape or threatened the woman´s life (11), this number is closer to the number in this study. Also the question in this study was asked in another way, making the results hard to compare.

In this study 92% thought it was illegal for a woman to seek abortion without the consult of her husband, which is consistent with the findings in Rocca´s study from 2013 where 90% thought the same (33). 86% answered that sex-selective abortions were illegal, which can be compared to 10% in a study from 2013 (6). The big difference might be explained by the use of a translator in this study, and the fact that sex-selective abortions are a very sensitive subject with high risk of answering bias (25). Sex-selective abortions were seen as morally

justified by 9% of the participants in this study, which can be compared to a study from Kathmandu where 8% performed prenatal sex-determination (53).

5.3 Future questions

This study took place at a hospital where abortion services are not provided, and the staff´s attitudes towards abortion were probably well known among the villagers, and could affect their answers. It would be interesting to investigate knowledge and attitudes towards abortion at a hospital where abortion services are provided, and where the staff have positive attitudes towards it, to compare it to this hospital.

Other studies have shown that higher education level means more knowledge on the abortion law (13, 31, 32). In this study it was the other way around, taking the medical students away. This is another thing that could be studied in future studies.

Another interesting thing to further investigate is the attitudes towards sex-selective abortions, among healthcare workers and others. To deal with this issue it is important to realise what is causing it, since people can perform sex-determination in private clinics and it is impossible for abortion providers to know which parents that have done this. The underlying problem is among researchers stated to be the low status of women in Nepal, and the system where having a daughter only means an extra cost in terms of dowry (21, 22, 52, 54).

5.4 Methodological considerations

This study has several limitations. The method using questionnaire based interviews was chosen to ensure that the same questions were asked to all participants. The use of a translator was chosen due to the poor literacy rate in rural Nepal, very few are able to read good enough to fill out a questionnaire themselves. It was though hard to control if the translator really asked the questions in the same way to every participant, since the author didn´t understand

Nepali. Also, abortion is a sensitive matter in Nepal and the honesty is probably not as good as if the study was based only on questionnaires (30, 31).

The translation of the questions from English to Nepali is possible complicating factor. There might not be neutral words for everything in Nepali, and the author could not control which words were used for abortion and other important words. A positive or negative connotation can affect the answers.

The selection of patients from the front of the queue was considered to be the most effective way to collect participants since it was not so many patients every day, and by starting from the back of the line many patients would be gone before being asked to participate. The most patients arrived in the morning, and went home as soon as they had met the doctor. This study is only representative for persons coming to the hospital, since the most poor people couldn´t afford to go to the hospital if it was nothing really acute and they could get financial help from the hospital´s fund. Also it included more women than men, due to the fact that many men worked far away from the village and were only home one or two months every year. This is representative for the village, but not for whole Nepal. The number of men was at the lower edge for an optimal study population.

Significant differences was almost only seen between medical students and other participants, at the same time as the number of medical students was very small. Their close relationship might make them answer more similar than seven random medical students. They were also all in about the same age. All women in the abortion questions in this study were married, and they all sought abortion in week six of pregnancy. This was to make the cases comparable, and because this situation is the most common when it comes to abortion in Nepal (48). At the same time this means that this study does not handle late abortions or abortions among unmarried women, two important and controversial matters (8, 34, 46). Also, it might not be so common to know about a pregnancy in week six in rural Nepal, and it is impossible to see

the sex of the foetus in week six using only ultrasound which is the most common sex-determination method. The different reasons for seeking abortions was brought from the new abortion law (15) and studies that dealt with common reasons for seeking abortions in Nepal (34). The inclusion of men was due to research showing that men are the main decision makers when it comes to abortion (27), but also that research is pointing out the importance of including men in abortion studies (21) and the fact that very few studies actually do so.

The question on weeks was not asked in the best way. Now there were several alternatives, making the participants choose one of them even if they thought something else. It would have been better if it was an open question, or at least had the alternative zero weeks. Almost all participants now answered four weeks, since this was the lowest alternative. In analysis, only the participants with the correct answer, 12 weeks, were compared to all the others. In other studies the question on weeks have been asked in other ways, and it is therefore hard to compare the results from this study with other studies.

This study does not ask about previous abortions, which might affect both knowledge and attitudes. A question about this could be good to include in future studies.

5.5 Conclusions

The knowledge of the Nepalese abortion law is shown to be poor by this study. Regarding attitudes, most of the study participants thought abortion was justified after rape or because of medical conditions, but few thought abortion was justified because of poverty or sex-selection, or when only one of the parents wanted to abort.

5.6 Implications

Safe abortions are considered a human right (56), and therefore it is important to look at abortion services from a human rights perspective, addressing availability, accessibility, acceptability and quality (57), to reduce maternal mortality. The three most important things

seem to be increase the number of service providers, especially in rural areas, increase knowledge of the law and address attitudes towards abortion (6, 11, 24, 32, 43, 58). More efforts are needed to make people more knowledgeable about the abortion law, and to create favourable attitudes towards abortion. This study indicates that even where abortion services are legal, far from everybody are aware of this, which means that abortion services does not fulfil the requirement of being accessible to all. Therefore, safe abortions are still not a human right that everyone in the world can benefit from.

6. Populärvetenskaplig sammanfattning på svenska

”Abort – kunskap och attityder i Amp Pipal, Nepal”

Abort innebär att en graviditet avsiktligt avbryts på ett eller annat sätt. Varje år dör 50,000 unga kvinnor för att de gör osäkra aborter genom att äta giftiga saker eller genom att stoppa in vassa och smutsiga föremål i livmodern. Det mest effektiva sättet att undvika att så många dör är att göra abort lagligt, så att säkrare metoder görs lättillgängliga. Detta gör inte att fler aborter utförs, utan bara att de utförs på ett säkrare sätt.

Nepal har länge varit ett av de länder i Världen där flest kvinnor, i förhållande till antalet levande nyfödda, dör varje år p.g.a. osäkra aborter. Sedan aborter blev lagliga 2002 så dör mycket färre, men fortfarande vet de flesta inte om att abort är lagligt. Dessutom hindrar folks attityder mot abort kvinnor från att söka säkra aborter, och många dör därför fortfarande helt i onödan.

Den här studien undersökte kunskapen om abortlagen och inställningen till aborter hos vuxna på ett sjukhus på landsbygden i Nepal, för att sedan undersöka om det fanns några skillnader mellan personer i olika ålder, med olika utbildning, av olika etnicitet eller kast, av olika kön eller mellan läkarstudenter och andra. Detta gjordes genom intervjuer, där frågorna var skrivna innan och lästes upp av en tolk.

118 patienter på sjukhuset och 7 läkarstudenter var med i studien. Nästan hälften av kvinnorna kunde varken läsa eller skriva, liksom en femtedel av männen. Generellt sett så kunde deltagarna inte så mycket om abortlagen. Bara en av tio visste att abort var lagligt t.o.m. vecka 12 i graviditeten. Kunskapen var ungefär samma mellan alla grupper, förutom hos läkarstudenterna som kunde lite mer. De flesta tyckte att abort var bra om graviditeten berodde på en våldtäkt eller var farlig för kvinnans liv. Få tyckte att det var bra om aborten var p.g.a. att kvinnan var för fattig för att ta hand om ett barn, om hon gjorde det för att hon

inte ville ha ett barn av det könet eller om bara en av föräldrarna ville göra abort. Det visade sig också att ju mer kunskap deltagarna hade om abortlagen, desto mer positiv inställning till abort hade de.

Det här visar, liksom många andra studier, vikten av att informera människor om att abort är lagligt för att kunna minska mödradödligheten. Det är extra viktigt att se till att folk på landsbygden får informationen, eftersom de oftare är fattiga och inte har tillgång till TV eller all annan information som finns inne i städer. Säkra aborter betraktas som en mänsklig rättighet av FN, och det är därför viktigt att se till att alla i världen kan nyttja den.

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9. Tables, Figures and Appendices

Appendix 1 – Informed Consent

I am a medical student from Sweden, and I am doing a small research project about family planning and induced abortion in Nepal. You are invited to participate. The study is totally academic, and your answers will only be shown as numbers together with all the other answers.

Your participation in this research is entirely voluntary, and you may cancel at any time. If you choose to participate, you will have an interpreter read the questions to you, and to fill in the answers for you. If you do not find an answer consistent with what you want to reply, select the answer that is closest to it.

Your answers will be handled confidentially, with no possibility to be connected to you afterwards.

Please do not hesitate to ask if you have any questions. Thank you for your participation!

Appendix 2 – Questionnaire

Sex

- Female
- Male
- Other

Age in years

Highest level of education completed

- Never been to school/illiterate
- Informal education (literate)
- Primary level (1-5)
- Lower secondary (6-7)
- Secondary (8-10)
- Higher secondary level (+2)
- Higher education (bachelor, masters or PhD levels - University)

Occupation

- Healthcare worker (doctor/nurse/midwife)
- Healthcare worker student
- Other

Ethnicity/philosophy of life (eg. Chhetri, Brahmin, Magar)

Cases

Case 1: A married woman becomes pregnant. The family is very poor, so they can´t afford to have another child right now. They want to have an abortion in week 6 of pregnancy.

1. In this case, is it legal for them to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Case 2: A married woman gets to know that she is pregnant in the sixth week, her husband is the father. She doesn´t want to have a child right now, but she knows that her husband wants to. She wants to have an abortion without telling her husband.

1. In this case, is it legal for her to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Case 3: A married couple gets to know that they are pregnant in the sixth week. The father wants to have an abortion, but the mother wants to keep the child. She tells the healthcare workers that she doesn´t want an abortion when they are at the hospital.

1. In this case, is it legal for them to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Case 4: A married woman becomes pregnant after being raped by an unknown man. She wants to have an abortion in week 6 of pregnancy.

1. In this case, is it legal for her to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Case 5: A married woman becomes pregnant. She has a medical condition that means that there is great risk that she dies during childbirth. There is no risk for the child. She wants to have an abortion in week 6 of pregnancy.

1. In this case, is it legal for her to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Case 6: A married couple are pregnant in week 6. Now they get to know the sex of their child, and they want to have an abortion because they don't want a child of that sex.

1. In this case, is it legal for them to have an abortion in Nepal?
- Yes
- No
2. What do you, personally, think is the right thing to do?
- Seek an abortion
- Not seek an abortion
3. If you were the woman in this case, what would you personally have done?
- Seek an abortion
- Not seek an abortion

Short questions

Is it legal to seek an induced abortion for any reasons in some of the following weeks of pregnancy? Mark with X when legal:

- ☐ Week 4 of pregnancy
- ☐ Week 8 of pregnancy
- ☐ Week 12 of pregnancy
- ☐ Week 16 of pregnancy
- ☐ Week 20 of pregnancy

Do you personally think legal induced abortion should cost money or be free of charge?

If cost money, how much?

Appendix 3 – Knowledge

Case	Poverty		Only wife wants		Only husband wants		Rape		Medical condition		Sex-selective		Weeks		Total score	
Participant characteristics	n	%	n	%	n	%	n	%	n	%	n	%	n	%	mean	SD
Sex																
Women	17	19	9	11	80	95	76	89	65	77	71	84	9	12	3,8	0.8
Men	6	15	1	3	37	95	30	79	25	71	36	92	4	14	3.5	1.0
P-value	0.518		**0.170**		0.930		0.120		0.491		0.187		**0.751**		0.130	
Age groups																
15-35	12	20	7	12	51	91	47	84	43	77	47	83	8	17	3.8	1.0
36-55	9	20	2	5	43	100	36	86	30	77	36	86	5	15	3.7	1.0
56-80	2	8	1	4	23	96	23	92	17	71	24	96	0	0	3.6	0.6
P-value	**0.398**		**0.378**		0.122		0.620		0.829		0.258		0.137		0.487	
Level of education																
Illiterate	8	16	3	6	46	98	47	96	36	78	41	85	3	8	3.8	0.75
Primary level (1-5)	4	18	0	0	20	91	16	76	16	76	20	91	0	0	3.5	0.80
Lower secondary to secondary (6-10)	5	17	0	0	29	97	22	76	20	71	26	87	4	17	3.5	0.78
Higher level (+2 to University)	5	21	7	29	22	92	21	88	18	75	20	83	6	32	4.2	1.26
P-value	**0.974**		**0.001**		0.497		0.040		0.930		0.894		**0.013**		0.007	
Occupation																
Medical student	3	43	7	100	5	71	7	100	7	100	4	57	5	71	5.4	0.53
Other	19	16	3	3	112	97	99	85	83	74	103	88	8	9	3.6	0.82
P-value	**0,103**		**0.000**		0.003		0.275		0.122		**0.530**		0.000		0.000	
Ethnicity																
Brahman	10	21	2	5	44	94	42	91	35	76	38	81	5	13	3.7	0.85
Chhetri	5	23	1	5	20	95	16	73	15	71	19	86	4	24	3.7	0.95
Janagai	4	20	5	25	20	100	17	90	13	77	17	90	2	12	3.9	1.07
Muslim	0	0	1	33	3	100	3	100	3	100	3	100	0	0	4.3	0.58
Dalit	3	9	1	3	30	94	28	85	24	75	30	91	2	8	3.6	0.87
P-value	**0.542**		**0.018**		**0.896**		**0.310**		**0.986**		**0.755**		**0.667**		0.688	
Total	22	18	10	8	117	94	107	86	90	72	107	86	13	10	3.72	0.90

Number of participant with correct answer in every group. CI=95%. P-values between the different groups in every category, 2-sided Chi-Square Test. **Fisher´s exact** test was used when less than five participants in one group, these p-values are marked in **red**. *SD = standard deviation.

Appendix 4 – Attitudes morally right

Case	**Poverty**		**Only wife wants**		**Only husband wants**		**Rape**		**Medical condition**		**Sex-selective**	
Participant characteristics	n	%	n	%	n	%	n	%	n	%	n	%
Sex												
Women	21	24	2	2	6	7	84	98	73	87	9	11
Men	8	20	1	3	2	5	38	97	30	83	2	5
P-value	0.518		**1.000**		**1.000**		0.936		0.607		**0.500**	
Age groups												
15-35	19	33	2	4	6	11	55	97	49	89	5	9
36-55	7	16	0	0	1	2	42	98	35	88	3	7
56-80	3	12	1	4	1	4	25	100	19	76	3	12
P-value	**0.084**		**0.429**		**0.248**		0.633		0.278		**0.843**	
Level of education												
Illiterate	6	12	1	2	1	2	48	98	39	81	6	13
Primary level (1-5)	5	23	0	0	4	18	22	100	18	86	0	0
Lower secondary to secondary (6-10)	9	30	0	0	2	7	29	97	26	93	3	10
Higher level (+2 to University)	8	33	2	8	1	4	23	96	20	87	2	8
P-value	0.135		**0.250**		**0.097**		0.801		0.575		**0.408**	
Occupation												
Medical student	5	71	2	29	1	14	7	100	7	100	1	14
Other	23	20	1	1	7	6	115	98	96	85	10	9
P-value	0.000		**0.008**		**0.383**		0.669		0.268		**0.487**	
Ethnicity												
Brahman	10	21	0	0	3	6	46	98	41	87	6	13
Chhetri	7	32	1	5	1	5	22	100	20	95	1	5
Janagai	5	25	1	5	1	5	20	100	16	89	1	5
Muslim	0	0	1	33	0	0	3	100	2	100	0	0
Dalit	6	18	0	0	3	9	31	94	24	75	3	9
P-value	**0.734**		**0.013**		**0.964**		**0.683**		**0.323**		**0.806**	
Total	28	22	3	2	8	6	122	98	103	82	11	9

Number of participant who answered that they thought it was right to seek an induced abortion. **Fisher´s exact** test used when less than five participants in one group, these p-values are marked in **red**. The higher number, the more positive attitude towards abortion. Question two on all cases.

Appendix 5 – Attitudes would personally do

Case	Poverty		Only wife wants		Only husband wants		Rape		Medical condition		Sex-selective	
Participant characteristics	n	%	n	%	n	%	n	%	n	%	n	%
Sex												
Women	17	20	3	4	8	10	75	93	64	83	7	9
Men	9	24	2	5	3	8	33	89	29	85	1	3
P-value	0.592		**0.639**		**1.000**		0.538		0.774		**0.433**	
Age groups												
15-35	14	25	2	4	7	13	50	94	44	86	5	10
36-55	9	21	2	5	3	7	35	85	32	87	1	2
56-80	3	13	1	4	1	4	23	96	17	74	2	8
P-value	**0.502**		**1.000**		**0.541**		0.210		0.353		**0.407**	
Level of education												
Illiterate	8	17	3	6	2	4	43	94	32	76	3	7
Primary level (1-5)	4	19	0	0	2	10	18	90	19	91	0	0
Lower secondary to secondary (6-10)	9	30	0	0	5	17	28	97	24	92	2	7
Higher level (+2 to University)	5	21	2	9	2	9	19	83	18	82	3	13
P-value	**0.600**		**0.247**		**0.291**		0.309		0.269		**0.412**	
Occupation												
Medical student	3	43	1	14	1	14	5	71	6	86	1	14
Other	23	20	4	4	10	9	103	93	87	84	7	6
P-value	**0.166**		**0.260**		**0.502**		0.049		0.886		**0.394**	
Ethnicity												
Brahman	7	14	2	4	4	9	40	91	36	82	5	11
Chhetri	7	32	0	0	2	10	19	91	18	90	1	5
Janagai	4	22	1	5	2	10	18	90	14	100	1	5
Muslim	0	0	0	0	0	0	3	100	2	100	0	0
Dalit	8	24	2	6	3	10	28	93	23	74	1	3
P-value	**0.507**		**0.820**		**1.000**		**1.000**		**0.218**		**0.800**	
Total	26	21	5	4	11	9	108	86	93	74	8	6

Number of participant who answered that they would personally seek an induced abortion. **Fisher´s exact** test used when less than five participants in one group, these p-values are marked in **red**. The higher number, the more positive attitude towards abortion. Question three on all cases.

Appendix 6 – Attitudes total and cost

	Attitude		**Free service**	
Participant characteristics	mean	SD	n	%
Sex				
Women	4.3	1.7	5	10
Men	4.0	1.3	6	24
P-value	0.592		0.091	
Age groups				
15-35	4.5	1.8	4	11
36-55	4.0	1.4	4	17
56-80	4.0	1.2	3	18
P-value	0.757		**0.761**	
Level of education				
Illiterate	3.9	1.3	3	10
Primary level (1-5)	4.2	1.2	0	0
Lower secondary to secondary (6-10)	4.6	1.9	4	20
Higher level (+2 to University)	4.4	2.0	4	25
P-value	0.322		**0.255**	
Occupation				
Medical student	5.7	2.2	3	60
Other	4.1	1.5	8	11
P-value	0.056		**0.019**	
Ethnicity				
Brahman	4.3	1.3	7	24
Chhetri	4.5	1.7	1	8
Janagai	4.2	2.0	2	14
Muslim	3.7	1.5	0	0
Dalit	4.0	1.6	1	5
P-value	0.992		**0.398**	

Attitudes in number of points combining question two and three in all cases.

Number of partcipants who thought induced abortion should a free service. **Fisher´s exact** test used when less than five participants in one group, these p-values are marked in **red**.